

CARBON MOLECULAR SIEVE AND PROCESS FOR PREPARING THE SAME

Abstract of the Disclosure

5 The present invention provides a carbon molecular sieve prepared by forming carbon nanorods or carbon nanotubes with a uniform diameter inside pores of siliceous mesoporous molecular sieve and a process for preparing the same. The process for preparing a carbon molecular sieve of the present invention comprises the steps of; adsorbing a mixture of an aqueous carbohydrate solution and an acid or a precursor of
10 carbon polymer into pores of mesoporous silica molecular sieve template, and polymerizing; heating the mesoporous molecular sieve including polymeric material at 400 to 1400°C under vacuum condition or without oxygen to accomplish thermal decomposition of the polymeric material included in the pores; and, reacting the heated mesoporous molecular sieve with hydrofluoric acid or aqueous sodium hydroxide
15 solution and removing the template to obtain a carbon molecular sieve. The carbon molecular sieve of the invention is superior in terms of the hydrogen adsorption effect and the activity for oxygen reduction, which makes possible its universal application for the development of adsorbents for organic materials, sensors, electrodes, and materials for fuel cells and hydrogen storage.

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